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Andy

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June 24, 1957

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Dear Sir:

We are enclosing two (2) copies of Progress Report No. 34 on our Project No. A-077 covering the month of May, 1957.

Expenditures on this project during May amounted to \$2,725.51, leaving an uncommitted and unexpended balance of approximately \$27,435.30.

Sincerely yours,

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Assistant Manage

ILLEGIB

2 encls.  
RWB/es

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## Progress Report No. 34

## I. INTRODUCTION

During the month of May, 1957, covered by this report, experimental work was continued [redacted] with a comparison of the noise of standard and high speed [redacted]. As explained below, tests using the panel were stopped and plans were considered for substituting a different facility for panel tests.

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## II. PROPOSED NEW TEST FACILITY

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The situation was discussed with the sponsor's representatives during their visit on June 8th and various alternate locations for panel tests were discussed. The two principle alternatives were (1) constructing a building in a large gravel quarry [redacted] and (2) adding space to the southwest corner of the laboratory at Riverbank with provision for a backstop located far enough away to reduce reflections for near field sound measurements, but close enough for safety. The building [redacted] was ruled out because of cost of duplicating necessary laboratory facilities and the difficulties of transporting the classified material to and from the test site. Plans are, therefore, being drawn for a one-story building addition about 15 x 30 feet in area at Riverbank, and it is believed that it can be designed to be more flexible and satisfactory than the old test set-up.

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## III. PROJECT WORK

On June 8, the sponsor's representatives listened to the two new [REDACTED]. Comparisons were made with various other [REDACTED]. The wind was strong from a little south of west and the sun was out, giving a shadow zone west of the firing point. This prevented observation of differences in the directionality of the noise from the various weapons. They were all nearly inaudible at 500 feet and 15° from [REDACTED] because of the observer being in the shadow zone. The two [REDACTED] were delivered to Hank at the end of the visit.

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Values with asterisks are ballistic noise peaks easily distinguished by the shape of the pulses. It is not known why the values at 15° and 30° for [REDACTED] are 3 to 4 db greater for [REDACTED] than [REDACTED] when bullet velocity is lower for the

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[ ] Possibly there is an experimental error in the data based on only one or two shots. Before exploration of the directional pattern of ballistic noise, which involves distance from the path as well as angle, some preliminary conclusions can be drawn as follows.

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1. With supersonic velocities the noise at angles of 15° to 30° is ballistic noise which, of course, is not affected [ ]

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2. This noise is considerably higher (20 db) than the noise

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[ ] This will aid in specifying the sector where noise can be reduced.

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## V. NOTEBOOKS

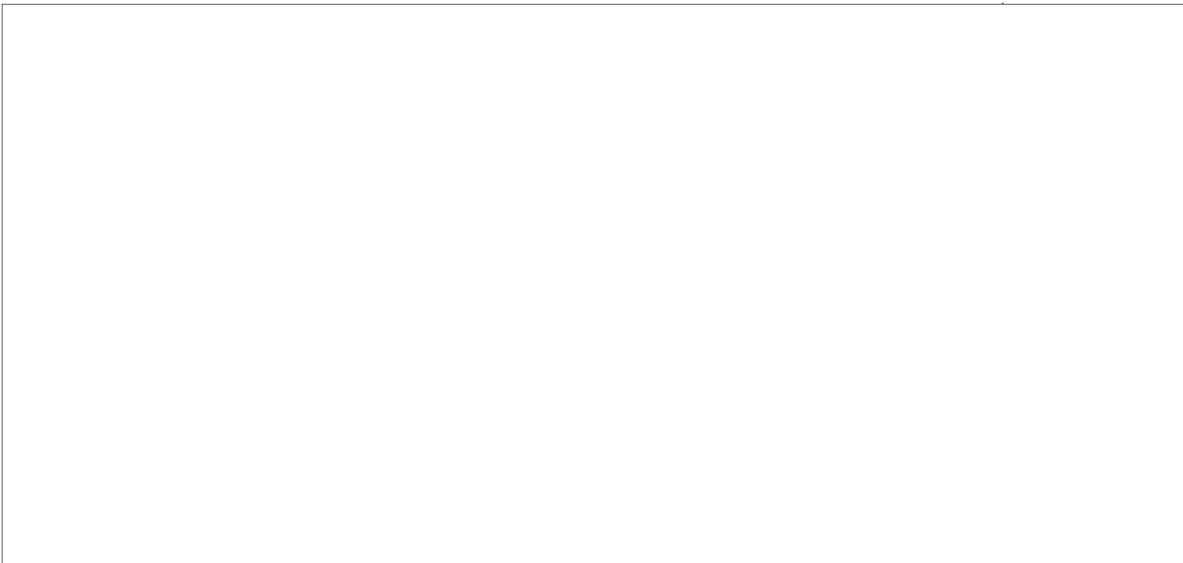
Data for this report are contained in [ ] Notebooks No. C-5517 and C-6217.

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VI. CONTRIBUTING PERSONNEL



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